NASA Procedural Requirements

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APPENDIX B. Definitions

Acceptable Risk. The risk that is understood and agreed to by the program/project, GPMC, Enterprise, and other customer(s) sufficient to achieve the defined success criteria within the approved level of resources.

Acquisition. The acquiring, by contract, of supplies or services (including construction) through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated, or evaluated. Acquisition begins at the point when Agency needs are established and includes the description of requirements to satisfy Agency needs, solicitation, and selection of sources, award of contracts, contract financing, performance, administration, technical, and management functions directly related to the process of fulfilling Agency needs by contract.

Acquisition Team. All participants in Government acquisition, including not only representatives of the technical, supply, and procurement communities, but also the customers they serve and the contractors who provide the products and services.

Activity. Any of those major program and project management components that are executed in order to complete a subprocess within the PAPAC process. Note: in Chapters 2 and 3 of this document, an activity is carried as a three-digit item (e.g., x.y.z.).

Advocacy Chain. Any person that has a vested interest in the outcome of a particular program or project.

Agency Program Management Council (Agency PMC). The senior management group, chaired by the Deputy Administrator or the Administrator's designee, responsible for reviewing program formulation performance, recommending approval of proposed programs, and overseeing implementation of designated programs and projects according to Agency commitments, priorities, and policies.

Allowance for Program Adjustment (APA). Fiscal resources available for approved changes in program objectives or scope that are documented in the PCA, the resolution of unforeseen major problems, program/project stretch outs from Agency funding shortfalls, and similar fiscal events.

Approval. The PAPAC subprocess used to initially decide on a program/project's readiness to proceed from formulation into implementation and subsequently used to approve changes to the program/project baseline.

Baseline. The technical performance and content, technology application, schedule milestones, and budget (including contingency and APA) which are documented in the approved Program and Project Plans.

Commercialization. The use of NASA technology by a U.S. firm for commercial applications.

Component Facilities. Complexes that are geographically separated from the NASA Center or institution to which it is assigned.

Configuration Management. A management discipline applied over the product's life cycle to provide visibility and to control performance and functional and physical characteristics.

Contingency. Reserves, including funding, schedule, performance, manpower, and services, allocated to and managed by the Program/Project Manager for the resolution of problems normally encountered to mitigate risks while ensuring compliance to the specified program/project scope.

Contract. A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. In addition to bilateral instruments, contracts include, but are not limited to, awards and notices of awards; job orders or task letters initiated under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications.

Crosscutting Technology. That which is generally applicable to multimissions and focuses on the earlier stages of the life cycle.

Customer. Any individual, organization, or other entity to which a program or project provides a product(s) and/or service(s).

Earned Value Management (EVM). A tool for measuring and assessing program/project performance through the integration of technical, cost, and schedule parameters during the execution of the program or project.

Environmental Impact. The direct, indirect, or cumulative beneficial or adverse effect of an action on the environment.

Environmental Management. The activity of ensuring that program and project actions and decisions which potentially impact or damage the environment are assessed/evaluated during the formulation/planning phase and reevaluated throughout implementation and performed according to all NASA policy and Federal, state, and local environmental laws and regulations.

Estimate at Completion. The sum of program/project actual costs to date, estimated costs to complete (ETC), and reserves. Contractor financial information is included in the program/project Estimate at Completion.

Evaluation. The PAPAC subprocess used to provide independent assessments of the continuing ability of the program/project to meet its technical and programmatic commitments. Evaluation also provides value-added assistance to the program/project managers.

Formulation. The PAPAC subprocess used to define the program/project concept and plan to meet customer requirements.

Formulation Authorization Document (FAD). The document issued by the EAA to authorize the level of formulation of a program whose goals will fulfill part of the Enterprise Strategic Plan. In addition, a FAD or equivalent is used to authorize the level of formulation of a project.

Governing Program Management Council (GPMC). The highest level PMC that has the responsibility to regularly review a program or project.

Implementation. The PAPAC subprocess used to deliver the products and capabilities specified in the approved Program/Project Plan.

Independent Implementation Review (IIR). An assessment conducted by experts outside the advocacy chain, of the status of the commitments (performance, cost, and schedule) in a PCA, Program Plan, and/or Project Plan at approximately annual intervals during implementation.

Independent Assessment (IA). An assessment conducted during formulation by experts outside the advocacy chain, of the design process used to develop an advanced concept and a validation of the selected concept's ability to efficiently meet the success criteria.

Independent Life-Cycle Cost Analysis (ILCCA). An LCC analysis generated by a designated team outside of the advocacy chain of the program/project being reviewed. Accompanying documentation includes the program/project requirements and technical risk assumptions underlying the analysis.

Independent Program Assessment Office (IPAO). The organization responsible for scheduling, organizing, and conducting the NAR, IIR, and IA's for programs/projects reporting to the Agency PMC.

Independent Verification and Validation (IV&V). A process whereby the products and processes of the software development life-cycle phases are reviewed, verified, and validated by an organization that is neither the developer nor the purchaser of the software, which is defined by two parameters - technical independence and managerial independence. Technical independence engages personnel who are not involved in the development activities. Managerial independence requires responsibility for the IV&V effort to be vested in an organization separate from the organization responsible for development.

Information Technology. Hardware and software operated by a Federal agency or by a contractor of a Federal agency or other organization that processes information on behalf of the Federal Government to accomplish a Federal function, regardless of the technology involved, whether by computers, telecommunications systems, automatic data processing equipment, or other.

Infrastructure. The human resources, facilities, equipment, information resources, and administrative and program support services that are available to support programs and projects. Utilization of the capability afforded by the infrastructure includes consideration of the maintenance and other liabilities it presents.

In-House Project. One that is conducted onsite or in the immediate vicinity of a NASA Center in which most major technical, business, and management tasks are performed primarily by the Center's civil service workforce.

Lesson Learned. The significant knowledge or understanding gained through past or current programs and projects that is documented and collected to benefit current and future programs and projects.

Life-Cycle Cost (LCC). The total of the direct, indirect, recurring, nonrecurring, and other related expenses incurred, or estimated to be incurred, in the design, development, verification, production, operation, maintenance, support, and retirement of a system over its planned life.

Logistics. The management, engineering activities, and analysis associated with design requirements definition, material procurement and distribution, maintenance, supply replacement, transportation, and disposal which are identified by flight and ground systems supportability objectives.

Margin. The allowances carried in budget, projected schedules, and technical performance parameters (e.g., weight, power, or memory) to account for uncertainties and risks. Margins are baselined in the formulation subprocess, based on assessments of risks, and are consumed as the program/project proceeds through the life cycle.

Metric. A measurement taken over a period of time that communicates vital information about a process or activity. A metric should drive appropriate action.

Mission. A major activity required to accomplish an Agency goal or to effectively pursue a scientific, technological, or engineering opportunity directly related to an Agency goal. Mission needs are independent of any particular system or technological solution.

Mission Assurance. Those independent activities performed outside of the program or project that are necessary to provide increased confidence in achieving mission success. The mission assurance activities will typically include independent assessments, Non-Advocate Reviews (NAR's), process verification, program or project reviews and audits, quality assurance, software verification, and other activities that validate approaches and/or highlight potential problem areas.

Mission Success. Those activities performed in line and under the control of the program or project that are necessary to provide assurance that the program or project will achieve its objectives. The mission success activities will typically include risk assessments, system safety engineering, reliability analysis, quality assurance, electronic and mechanical parts control, software validation, failure reporting/resolution, and other activities that are normally part of a program or project work structure.

Non-Advocate Review (NAR). The analysis of a proposed program or project by a (nonadvocate) team composed of management, technical, and budget experts (personnel) from outside the advocacy chain of the proposed program or project. It provides Agency management with an independent assessment of the readiness of the program/project to proceed into implementation.

Occupational Health. The promotion and maintenance of physical and mental health in the work environment.

Performance-Based Contracting. Structuring all aspects of an acquisition around the purpose of the work to be performed as opposed to either the manner by which the work is to be performed or broad and imprecise statements of work.

Performance Measurement Baseline. The time-phased budget plan against which contract execution is measured. It is formed by the budgets assigned to scheduled control accounts and the applicable indirect budgets. For future effort, not planned to the control account level, it also includes budgets assigned to higher level contractor work breakdown structure elements and undistributed budgets. It equals the total allocated budget less management reserves.

Primary Risks. Those undesirable events having both high probability and high impact/severity.

Program. A major activity within an Enterprise having defined goals, objectives, requirements, and funding levels, and consisting of one or more projects.

Program Commitment Agreement (PCA). The contract between the Administrator and the cognizant EAA for implementation of a program.

Program Management Council (PMC). One of the hierarchy of forums, composed of senior management, that assesses program and project planning and implementation and provides oversight and direction as appropriate. These are established at the Agency, Enterprise, Center and lower levels.

Program Operating Plan (POP). A document produced by a Center in response to Headquarters-directed budget

guidelines, including requested budgets by program or project.

Program Plan. The document that establishes the baseline for implementation, signed by the EAA, CD, and Program Manager.

Program (Project) Team. All participants in program (project) formulation and implementation. This includes all direct reports and others that support meeting program (project) responsibilities.

Project. An activity, designated by a program, characterized as having defined goals, objectives, requirements, a Life-Cycle Cost (LCC), a beginning, and an end.

Project Plan. The document that establishes the baseline for implementation, signed by the Program Manager, CD, and Project Manager.

Quality Assurance. A planned and systematic set of actions necessary to provide confidence that the products or services conform to documented requirements.

Requirements Review (RR). An assessment, during the formulation subprocess, of the completeness, consistency, and achievability of the project objectives and requirements, including those specified in the FAD. The RR covers, as applicable, mission, project, science, operational, flight system and ground system requirements, including cost and schedule. The RR is conducted prior to the initiation of preliminary design.

Reserves. The APA and contingency resources.

Resources Management. A function that is composed of planning and monitoring implementation of cost, workforce, and facility requirements; correlating these requirements to technical and schedule performance; and comparing these parameters to baselines established for the program and projects. This function establishes, monitors, and updates budget development and execution and contractor financial reporting.

Risk. The combination of (1) the probability (qualitative or quantitative) that a program or project will experience an undesired event such as cost overrun, schedule slippage, safety mishap, compromise of security, or failure to achieve a needed technological breakthrough; and (2) the consequences, impact, or severity of the undesired event were it to occur.

Risk Management. An organized, systematic decision making process that efficiently identifies, analyzes, plans, tracks, controls, communicates, and documents risk to increase the likelihood of achieving program/project goals.

Safety. Freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Schedule Management. The establishment, monitoring, and maintenance of the baseline master schedule and derivative detailed schedules. It is composed of the establishment and operation of the system and includes (1) definition of format, content, symbology, and control processes, and (2) selection of key progress milestones and indices for measuring program and project performance and indicating problems.

Security. Protection of people, property, and information assets owned by NASA which covers physical assets, personnel, IT, communications, and operations.

Stakeholder. An individual or organization having an interest (or stake) in the outcome or deliverable of a program or project.

Success Criteria: That portion of the top-level requirements that define what will be achieved to successfully satisfy the Strategic Plan objectives addressed by the program, project, or technology demonstration.

Surveillance. The continual monitoring and verification of status of an entity and analysis of records to ensure that specified requirements are being met. Surveillance can be performed in an insight, oversight, or a combined mode, using a risk-based decision process.

System. The combination of elements that function together to produce the capability required to meet a need. The elements include all hardware, software, equipment, facilities, personnel, processes, and procedures needed for this purpose.

Systems Management Office. The Center organization responsible for independent review and assessment of programs/projects during formulation and implementation, whose findings are reported to the Center GPMC.

Tailoring. The documentation and approval of the adaptation of the PAPAC process and approach to complying with requirements underlying the specific program or projects. The results of this activity are documented in the FAD, PCA, Program Plan, and/or Project Plan.

Termination Review. An analysis by the GPMC or by an independent assessment board, i.e., IPAO or SMO, for the purpose of securing a recommendation as to whether to continue or terminate a program or project. Exceeding the parameters or levels specified in controlling documents will result in PMC or GPMC consideration of a termination

review.

Validation. Proof that the product accomplishes the intended purpose. May be determined by a combination of test, analysis, and demonstration.

Verification. Proof of compliance with specifications. May be determined by a combination of test, analysis, demonstration, and inspection.

Work Breakdown Structure (WBS). A product-oriented hierarchical division of the hardware, software, services, and data required to produce the program/project's end product(s), structured according to the way the work will be performed, and reflective of the way in which program/project costs, schedule, technical and risk data are to be accumulated, summarized, and reported.

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